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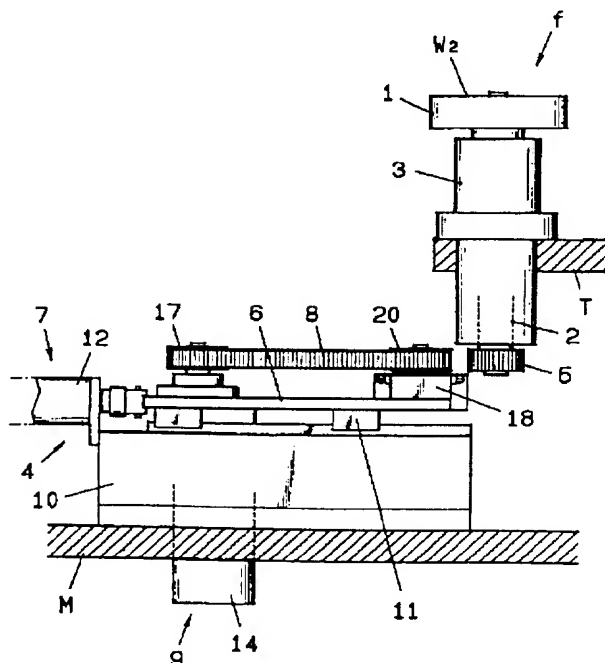
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(54) 【発明の名称】 DVD貼り合わせ装置

(57) 【要約】

【課題】 回転軸を回転させる基材回転機構は回転テーブルに配置されていないので、回転テーブルの慣性モーメントの増加を抑制することができ、それだけ割出位置決め精度を高めることができる。

【解決手段】 各回転軸2に回転体5を配設し、回転テーブルTの外側方位置としての接着剤塗布位置c及び基材回転位置fに回転体を回転させる基材回転機構4を配設してなる。



【特許請求の範囲】

【請求項1】 少なくとも給送位置、接着剤塗布位置、重合位置及び基材回転位置を間欠割出回転する回転テーブルに複数の回転軸を配設し、該各回転軸の上端部に保持部材を配設し、該給送位置で各保持部材上に合成樹脂板からなるDVD用の二枚の基材のうちの下側の一方の基材を給送し、接着剤塗布位置で該一方の基材を回転しつつその板面に接着剤を塗布し、重合位置で該上側の他方の基材を接着剤を介して一方の基材に重ね合わせ、基材回転位置で該重ね合わせた二枚の基材を回転させて接着剤を広げて二枚の基材を貼り合わせる装置において、上記各回転軸に回転体を配設し、上記回転テーブルの外側方位置としての上記接着剤塗布位置及び基材回転位置に該回転体を回転させる基材回転機構を配設して構成したことを特徴とするDVD貼り合わせ装置。

【請求項2】 上記基材回転機構は、上記回転体に向けて進退動作可能な移動台と、該移動台を進退動作させる進退機構と、該移動台の進退動作により該回転体に接触離反可能な駆動ベルトを含む駆動機構とからなることを特徴とする請求項1記載のDVD貼り合わせ装置。

【請求項3】 上記駆動ベルトは無端ベルトからなり、該駆動ベルトを駆動プーリ及び一對の案内プーリに掛回配設し、該一方の案内プーリを他方の案内プーリに近接移動可能に配設し、該一方の案内プーリを他方の案内プーリから離反する方向に移動させるバネ部材を配設し、上記移動台の前進により駆動ベルトを回転体の外周面に倣って湾曲状に接触させることを特徴とする請求項1又は2記載のDVD貼り合わせ装置。

【請求項4】 上記駆動ベルトが歯付ベルトであることを特徴とする請求項1、2又は3記載のDVD貼り合わせ装置。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】本発明は光ディスクとしてのDVD（デジタルビデオディスク）の製造過程に用いられるDVD貼り合わせ装置に関するものである。

【0002】

【従来の技術】この種のDVDは大別して再生専用型DVD-ROMと、書き換え可能なDVD-RANに分けられる。ここに、SD規格のDVD用ディスクは、例えばポリカーボネートレベルの屈折率をもつ合成樹脂からなる直径12cm、厚さ0.6mmの薄板状の基材二枚を接着剤や接着シートを用いて貼り合わせた構造で、例えばSD規格の再生専用型SD-ROMにはSD-5（片面ディスク）、SD-9（片面読み取り二層ディスク）及びSD-10（両面ディスク）の三つのタイプがある。これらのうちで、特にSD-9については、片面から二層の信号を読み出せるように、接着層に再生波長の光を透過させる透明性及び接着層の厚みの均一性が要求されることになる。

【0003】これら二層光ディスクは、一般的に、まずディスク原盤を製作する原盤製作工程、次に信号面を転写した金属板を作製するスタンパ作製工程、このスタンパを用いて基材を大量に生産する複製工程、最後に二枚の基材を貼り合わせる貼り合わせ工程を経て製造される。

【0004】ここに、貼り合わせ工程においては、先ず、図7の如く、DVD用の二枚の基材 W_1 ・ W_2 のうちの一方の基材 W_1 を回転盤状の保持部材1に真空吸着させて固定し、保持部材1を低速で回転させながら紫外線硬化樹脂からなる接着剤Sを基材 W_1 上に滴下し、これにより図8の如く、接着剤塗布機構から接着剤Sは基材 W_1 上にリング状に塗布され、次に、図9の如く、この一方の基材 W_1 に図示省略の重合機構により他方の基材 W_2 を上から重ね合わせ、保持部材1を高速回転させることにより接着剤Sを対向する相互の基材 W_1 ・ W_2 間において遠心力で広げると共に余分な接着剤Sは基材 W_1 ・ W_2 の外端面から吐出させ、図10の如く、基板 W_1 上方から紫外線照射機構により紫外線Rを照射することにより接着剤Sを硬化させ、二枚の基材 W_1 ・ W_2 を相互に貼合わせることになる。

【0005】しかし、この貼り合わせの自動化に際しては、少なくとも作業ステーションとしての給送位置、接着剤塗布位置、重合位置及び基材回転位置を間欠割出回転する回転テーブルを採用し、この回転テーブルに複数の回転軸を配設すると共に各回転軸の上端部に基材を載置保持可能な保持部材を配設し、順次各作業ステーションにおいて貼り合わせ工程がなされることになる。

【0006】

【発明が解決しようとする課題】しかしながら上記従来構造において、上記回転軸の回転は各々複数の回転軸に付随して各回転軸毎に配置された回転機構によりなされ、この複数の回転軸は回転テーブルに配置されていることから、回転機構も回転テーブル側に配置され、よって各回転機構も回転テーブルと一緒に回転することになり、回転テーブルの慣性モーメントが増加して割出位置決め精度の低下を招くことがあり、それだけ貼り合わせ不良が生ずることがあると共に装置の大型化並びに製作コストの高騰を余儀なくされることがあるという不都合を有している。

【0007】

【課題を解決するための手段】本発明はこのような課題を解決することを目的とし、本発明のうち、請求項1記載の発明は、少なくとも給送位置、接着剤塗布位置、重合位置及び基材回転位置を間欠割出回転する回転テーブルに複数の回転軸を配設し、該各回転軸の上端部に保持部材を配設し、該給送位置で各保持部材上に合成樹脂板からなるDVD用の二枚の基材のうちの下側の一方の基材を給送し、接着剤塗布位置で該一方の基材を回転しつつその板面に接着剤を塗布し、重合位置で該上側の他

方の基材を接着剤を介して一方の基材に重ね合わせ、基材回転位置で該重ね合わせた二枚の基材を回転させて接着剤を広げて二枚の基材を貼り合わせる装置において、上記各回転軸に回転体を配設し、上記回転テーブルの外側方位置としての上記接着剤塗布位置及び基材回転位置に該回転体を回転させる基材回転機構を配設して構成したことを特徴とするDVD貼り合わせ装置にある。

【0008】又、請求項2記載の発明は、上記基材回転機構は、上記回転体に向けて進退動作可能な移動台と、該移動台を進退動作させる進退機構と、該移動台の進退動作により該回転体に接触離反可能な駆動ベルトを含む駆動機構とからなることを特徴とするものであり、又、請求項3記載の発明は、上記駆動ベルトは無端ベルトからなり、該駆動ベルトを駆動プーリ及び一対の案内プーリに掛回配設し、該一方の案内プーリを他方の案内プーリに近接移動可能に配設し、該一方の案内プーリを他方の案内プーリから離反する方向に移動させるバネ部材を配設し、上記移動台の前進により駆動ベルトを回転体の外周面に倣って湾曲状に接触させることを特徴とするものであり、又、請求項4記載の発明は、上記駆動ベルトが歯付ベルトであることを特徴とするものである。

【0009】

【発明の実施の形態】図1乃至図6は本発明の実施の形態例を示し、前記従来構造と同一態様部分には同符号を付して説明すると、Tは回転テーブルであって、この場合、機台Mに立設され、給送位置a、除電位置b、接着剤塗布位置c、重合位置d、微圧位置e、基材回転位置f、紫外線照射位置g、空位置h、良否判別取出位置i及びクリーニング位置jの合計一〇ステーションに間欠割出回転し、よって、回転テーブルTには一〇個の回転軸2が各々回転自在に軸受筒3により縦設され、各回転軸2の上端部には回転盤状の保持部材1が取り付けられ、保持部材1の中央部分には上下二枚の基材W₁・W₂の中心に形成された円形状の嵌合穴W₃に位置決め嵌合可能な中心軸部1aが突出形成され、保持部材1の盤面には図外の負圧源に連通する吸着溝部が形成され、この中心軸部1aにより、位置決め状態で一方の基材W₁を吸着保持及び釈放可能に形成している。

【0010】4は基材回転機構であって、この場合、接着剤塗布位置c、基材回転位置f及び紫外線照射位置gにそれぞれ配置され、上記各回転軸2の下部に取り付けられた回転体5と、回転体5に向けて進退動作可能な移動台6と、移動台6を進退動作させる進退機構7と、移動台6の進退動作により回転体5に接触離反可能な駆動ベルト8を含む駆動機構9とからなる。

【0011】この場合、機台Mに取付台10を取付け、取付台10に移動台6を軸受11により進退動作可能に取付け、取付台10に進退用シリンダ12を横設し、進退用シリンダ12のロッドと移動台6とを連結し、移動台6にブラケット13を取付け、ブラケット13に駆動

モータ14を縦設し、移動台6に駆動軸15を軸受16により縦設し、駆動モータ14の主軸と駆動軸15とを連結し、駆動軸15に駆動プーリ17を取付け、又、移動台6の一方側部に取付板18を取付け、取付板18に遊動軸19を植設し、駆動軸19に案内プーリ20を取付け、又、移動台6の他方側部に軸受21によりスライド板22を案内プーリ20に向けて近接移動自在に設け、移動台6にバネ掛け板23を立設し、バネ掛け板23にストッパ24を設け、スライド板22とバネ掛け板23との間にバネ部材25を掛架し、スライド板23に遊動軸26を植設し、遊動軸26に案内プーリ27を取付け、駆動プーリ17及び一対の案内プーリ20・27に無端状の駆動ベルト8を掛回し、移動台6の前進により駆動ベルト8を回転体5の外周面に倣って湾曲状に接触させるように構成している。

【0012】しかして、図2如く、駆動ベルト8は駆動プーリ17及び案内プーリ20・27の三個のプーリにより循環走行可能に掛回されていると共にバネ部材25により張架され、駆動モータ14の駆動により駆動ベルト8は循環走行することになり、そして進退機構7により移動台6を前進させると、図3の如く、駆動ベルト8は回転体5の外周面に接触し、更なる前進によりスライド板22がバネ部材25に抗して案内プーリ20に向けて移動され、これにより駆動ベルト8は回転体5の外周面に巻き付くように倣って湾曲して接触することになり、又、進退機構8により移動台6を後退させると、図2の如く、案内プーリ27はバネ部材25により元の位置に復帰移動することになる。

【0013】又、この場合、上記駆動ベルト8を歯付ベルト、いわゆるタイミングベルトとし、駆動プーリ17及び案内プーリ20・27を歯付プーリに形成している。

【0014】この実施の形態例は上記構成であるから、貼り合わせ工程においては、まず、給送位置aにおいて、DVD用の二枚の基材W₁・W₂のうちの一方の基材W₁が図外の基材供給機構により保持部材1上に一枚宛供給され、この基材W₁は保持部材1上に真空吸着作用により保持固定され、次いで、除電位置bにおいて、除電された後、接着剤塗布位置cにおいて、基材回転機構4により保持部材1を低速で回転させながら紫外線硬化樹脂からなる接着剤Sを基材W₁上に滴下し、これにより粘性をもつ接着剤Sは基材W₁上にリングドーナツ状に塗布され、次に、重合位置dにおいて、他方の基材W₂を一方の基材W₁上に上方から自重により置くような状態で同心状に重ね合わせ、次いで微圧位置eにおいて、他方の基材W₂を一方の基材W₁上に弱い圧力で軽く押圧し、接着剤Sを少し広げ、その後、基材回転位置fにおいて、基材回転機構4により保持部材1を高速回転させることにより接着剤Sを相互の基材W₁・W₂間において満遍なく広げると共に余分な接着剤Sは基材W₁・W₂の

外端面から吐出させ、この場合基材 W_1 ・ W_2 の板面には環状の液溜溝 W_4 が形成され、この液溜溝 W_4 内にも余分な接着剤 S が落とし込まれ、この後に紫外線照射位置 g において、基材回転機構4により、低速で保持部材1を回転させながら、紫外線を紫外線ランプより照射することにより接着剤 S を硬化させ、次いで、良否判別取出位置 i において、重ね合わせ状態の良品及び不良品に判別すると共に取り出すことになり、そして、クリーニング位置 j において、保持部材1上の接着剤等による汚れをクリーニングすることになり、この繰り返しにより連続的に一連の重ね合わせ工程がなされることになる。

【0015】この場合、上記各回転軸2に回転体5を配設し、回転テーブルTの外側方位置としての上記接着剤塗布位置 c 及び基材回転位置 f 、紫外線照射位置 g に、回転体5を回転させる基材回転機構4を配設して構成しているから、回転軸2を回転させる基材回転機構4は回転テーブルTに配置されていないので、回転テーブルTの慣性モーメントの増加を抑制することができ、それだけ割出位置決め精度を高めることができ、良好な貼り合わせ作業を行うことができると共に装置の小型化並びに製作コストの低減を図ることができる。

【0016】又、この場合、上記基材回転機構4は、上記回転体5に向けて進退動作可能な移動台6と、移動台6を進退動作させる進退機構7と、移動台6の進退動作により回転体5に接触離反可能な駆動ベルト8を含む駆動機構9とから構成されているので、進退機構7により移動台6を進退動作させて駆動ベルト8を回転体5に接触離反させることにより、回転軸2を回転及び停止させることができ、それだけ構造の簡素化を図ることができ、又、この場合、上記駆動ベルト8は無端ベルトからなり、駆動ベルト8を駆動プーリー17及び一対の案内プーリー20・27に掛回配設し、一方の案内プーリー27を他方の案内プーリー20に近接移動可能に配設し、一方の案内プーリー27を他方の案内プーリー20から離反する方向に移動させるバネ部材25を配設し、図2から図3の如く、移動台6の前進により駆動ベルト8を回転体5の外周面に倣って湾曲状に接触させるように構成しているから、駆動ベルト8により回転体5を確実に接触回転させることができ、更にこの場合、駆動ベルト8を歯付ベルトにより形成しているから、一層駆動ベルト8により回転体5を滑りを防いで確実に回転させることができ、それだけ保持部材1の回転精度を高めることができ、それだけ貼り付け作業を良好に行うことができる。

【0017】尚、本発明は上記実施の形態例に限られるものではなく、保持部材1、基材回転機構4、その他の構造についても適宜変更して設計され、又、基材回転機構4は接着剤塗布位置及び基材回転位置に限らず、必要なステーションに配置されるものである。

【0018】

【発明の効果】本発明は上述の如く、請求項1記載の発

明にあっては、各回転軸に回転体を配設し、回転テーブルの外側方位置としての接着剤塗布位置及び基材回転位置に、回転体を回転させる基材回転機構を配設して構成しているから、回転軸を回転させる基材回転機構は回転テーブルに配置されていないので、回転テーブルの慣性モーメントの増加を抑制することができ、それだけ割出位置決め精度を高めることができ、良好な貼り合わせ作業を行うことができると共に装置の小型化並びに製作コストの低減を図ることができる。

【0019】又、請求項2記載の発明にあっては、上記基材回転機構は、上記回転体に向けて進退動作可能な移動台と、移動台を進退動作させる進退機構と、移動台の進退動作により回転体に接触離反可能な駆動ベルトを含む駆動機構とから構成されているので、進退機構により移動台を進退動作させて駆動ベルトを回転体に接触離反させることにより、回転軸を回転及び停止させることができ、それだけ構造の簡素化を図ることができ、又、請求項3記載の発明にあっては、上記駆動ベルトは無端ベルトからなり、駆動ベルトを駆動プーリー及び一対の案内プーリーに掛回配設し、一方の案内プーリーを他方の案内プーリーに近接移動可能に配設し、一方の案内プーリーを他方の案内プーリーから離反する方向に移動させるバネ部材を配設し、移動台の前進により駆動ベルトを回転体の外周面に倣って湾曲状に接触させるように構成しているから、駆動ベルトにより回転体を確実に接触回転させることができ、又、請求項4記載の発明にあっては、駆動ベルトを歯付ベルトにより形成しているから、一層駆動ベルトにより回転体を確実に滑りを防いで回転させることができ、それだけ保持部材の回転精度を高めることができ、それだけ貼り付け作業を良好に行うことができる。

【0020】以上、所期の目的を充分達成することができる。

【図面の簡単な説明】

【図1】本発明の実施の形態例の部分側面図である。

【図2】本発明の実施の形態例の部分平面図である。

【図3】本発明の実施の形態例の部分平面図である。

【図4】本発明の実施の形態例の部分正面図である。

【図5】本発明の実施の形態例の部分側断面図である。

【図6】本発明の実施の形態例の全体説明平面図である。

【図7】貼合わせ工程の説明斜視図である。

【図8】貼合わせ工程の説明斜視図である。

【図9】貼合わせ工程の説明斜視図である。

【図10】貼合わせ工程の説明側面図である。

【符号の説明】

W_1 基材

W_2 基材

S 接着剤

a 給送位置

c 接着剤塗布位置

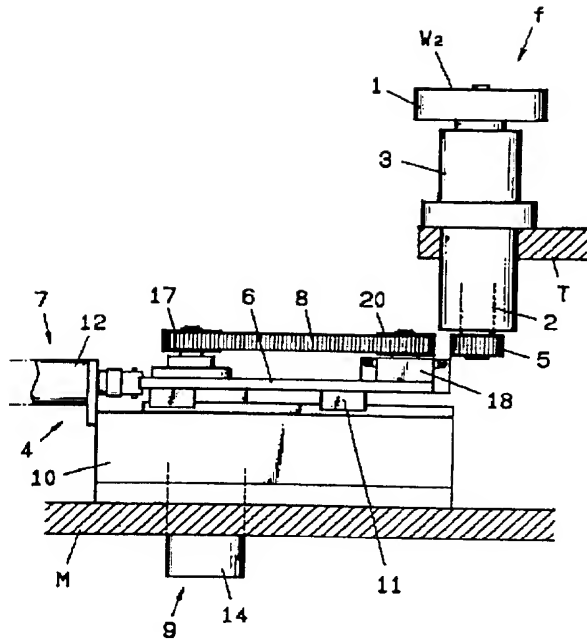
7

8

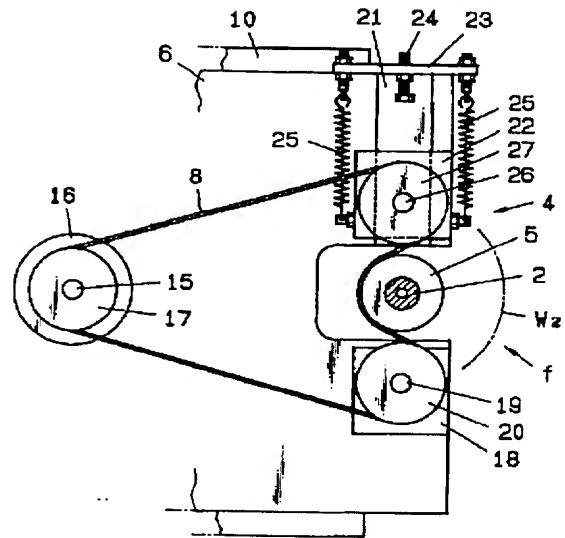
- d 重合位置
f 基材回転位置
T 回転テーブル
1 保持部材
2 回転軸
4 基材回転機構
5 回転体

- 6 移動台
7 進退機構
8 駆動ベルト
9 駆動機構
17 駆動プーリ
20 案内プーリ
24 案内プーリ

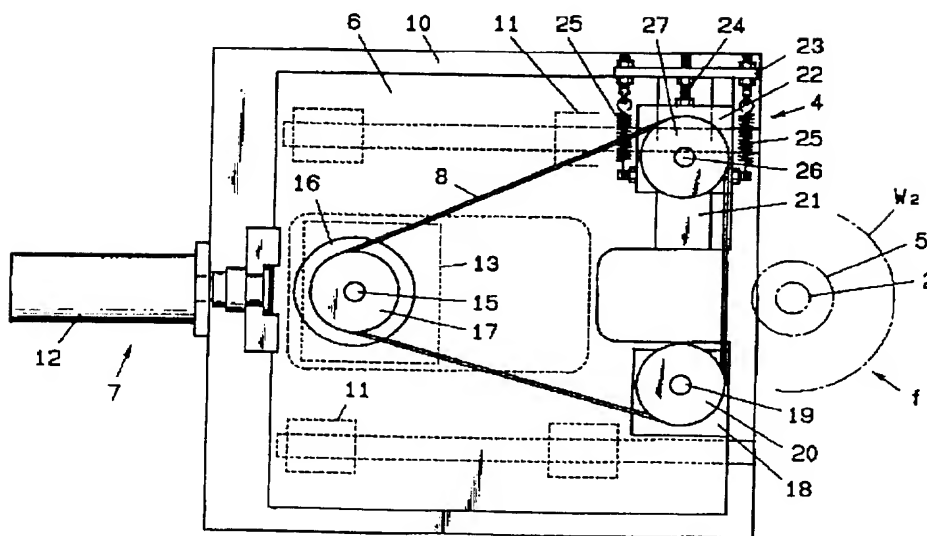
【図1】



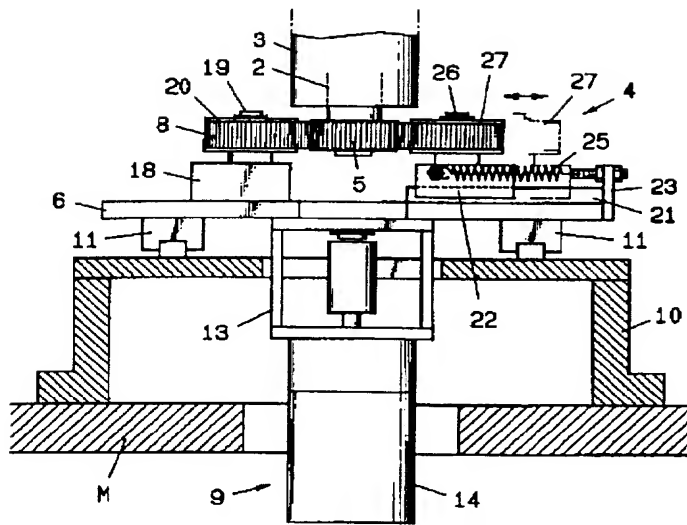
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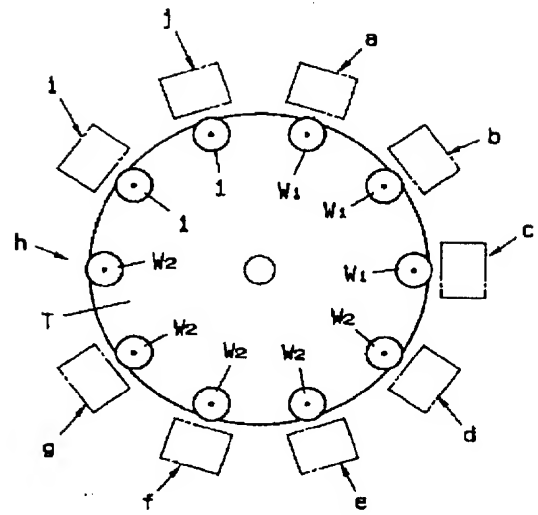
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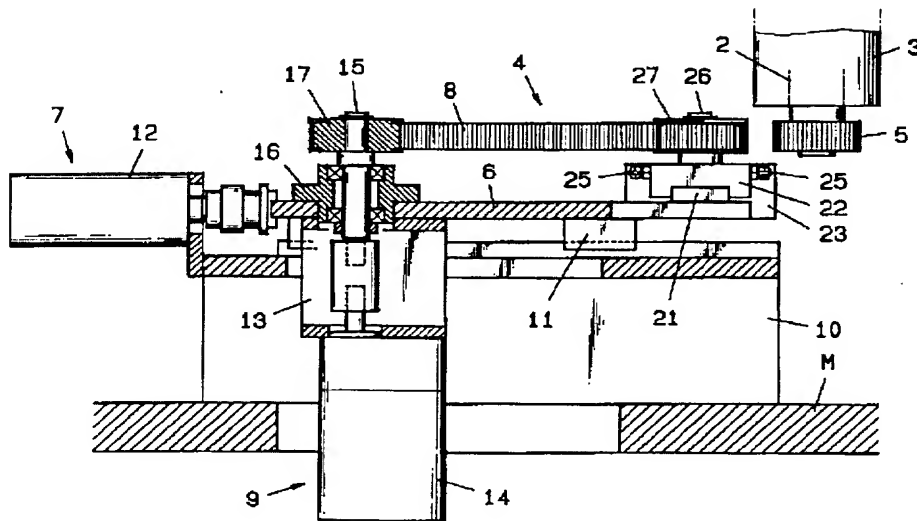
【図4】



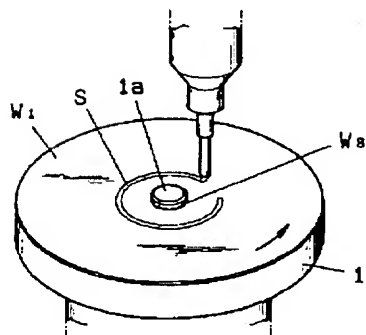
【図6】



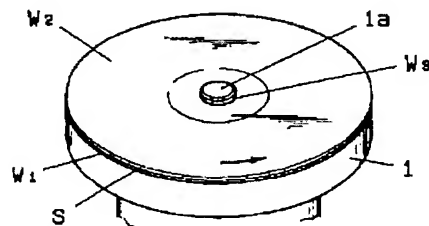
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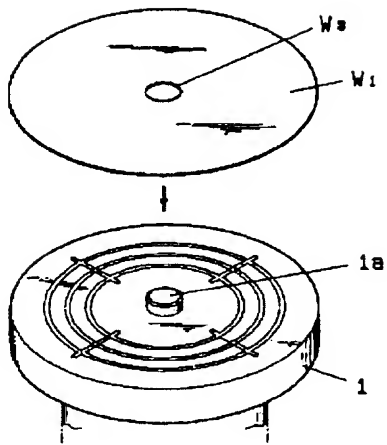
【図8】



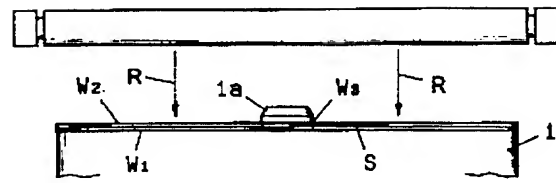
【図9】



【図7】



【図10】



PATENT ABSTRACTS OF JAPAN

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(22)Date of filing : 16.04.1997 (72)Inventor : HOSOGAI NOBUKAZU

(54) DVD PASTING SYSTEM

(57)Abstract:

PROBLEM TO BE SOLVED: To decrease the inertia moment of a turn table for intermittently indexing and rotating in correspondence to the respective workings stages of an pasting stage and to improve indexing and positioning accuracy by installing base material rotating mechanisms for rotating base material revolving shafts disposed at this turn table in a stage position where base material rotation is needed.

SOLUTION: The plural revolving shafts 2 disposed at the turn table T corresponding to the working stages have holding members 1 at the respective top ends and attract and hold base materials. The base material rotating mechanisms 4 are respectively fixed and set in the respective working stage positions on the outer side of the turn table; for example, adhesive coating, base material rotation and irradiation with UV rays. The respective base material rotating mechanisms 4 have drive mechanism 9 and drive belts 8. When the moving table 6 mounted with these mechanisms moves in the direction nearer the revolving shafts 2, the drive belts 8 come into contact with the rotating bodies 5 at the bottom ends of the revolving shafts 2 and rotate the base materials on the holding members 1.

[Detailed Description of the Invention]

[0001]

[Field of the Invention]This invention relates to the DVD laminating apparatus used for the manufacturing process of DVD (digital video disc) as an optical disc.

[0002]

[Description of the Prior Art]This kind of DVD is divided roughly and divided into only for [reproduction] type DVD-ROM, and rewritable DVD-RAN. It is the structure to which the disk for DVD of SD standard pasted together two with a [12 cm in diameter and 0.6 mm in thickness] which consist of a synthetic resin which has a refractive index of a polycarbonate level, for example laminated substrates here using adhesives and an adhesion sheet, For example, there are three types of only for [playback] type SD-ROM of SD standard, SD-5 (single-sided disk), SD-9 (one side reading bilayer disk), and SD-10 (double-sided disk). Among these, especially about SD-9, the transparency which makes a glue line penetrate the light of a reproducing wave length, and the homogeneity of the thickness of a glue line will be required so that the signal of a bilayer can be read from one side.

[0003]These bilayer optical disc is generally manufactured through the original recording manufacturing process which manufactures disk original recording first, the La Stampa making process which produces the metal plate which transferred the signal surface next, the process of reproduction which produces a substrate in large quantities using this La Stampa, and the lamination process of pasting the substrate of two sheets together to the last.

[0004]In a lamination process, first, like drawing 7, make the vacuum absorption of one substrate W_1 of the substrate [of two sheets] W_1 - W_2 for DVD carry out to the turntable-like attachment component 1 here, and it fixes to it, The adhesives S which consist of ultraviolet curing resin while rotating the attachment component 1 at a low speed are dropped on substrate W_1 . The adhesives S are applied to ring shape on substrate W_1 from a glue spreader style like drawing 8 by this, Next, substrate W_2 of another side is laid on top of substrate W_1 of one of these from a top according to the polymerization mechanism of a graphic display abbreviation like drawing 9. Between mutual substrate W_1 - W_2 which counter, open the adhesives S with a centrifugal force by carrying out the high velocity revolution of the attachment component 1, and the excessive adhesives S are made to breathe out from the outer edge surface of substrate W_1 - W_2 . Like drawing 10, by irradiating with the ultraviolet rays R according to an ultraviolet irradiation mechanism from the substrate W_1 upper part, the adhesives S will be stiffened and substrate [of two sheets] W_1 - W_2 will be pasted together mutually.

[0005]Carry out a deer and automation of this lamination is faced, The rotating table which carries out intermittent deduction rotation of the feed position, the adhesive application position, polymerization position, and substrate rotary place as a work station at least is adopted, Two or more axes of rotation will be allocated in this rotating table, and the

attachment component which can installation hold a substrate will be allocated in the upper bed part of each axis of rotation, it will paste together to it in each work station one by one, and a process will be made.

[0006]

[Problem(s) to be Solved by the Invention]. However, do rotation of the above-mentioned axis of rotation in structure by the rolling mechanism respectively arranged for every axis of rotation along with two or more axes of rotation conventionally [above-mentioned]. Since two or more of these axes of rotation are arranged at the rotating table, a rolling mechanism is also arranged at the rotating table side, Therefore, it will rotate together with a rotating table, the moment of inertia of a rotating table increases, and each rolling mechanism may also cause the fall of deduction positioning accuracy, Poor lamination may arise so much and it has the inconvenience of being obliged to enlargement of a device, and the jump of a manufacturing cost.

[0007]

[Means for Solving the Problem]This invention for the purpose of solving such a technical problem the invention according to claim 1 among this inventions, Two or more axes of rotation are allocated in a rotating table which carries out intermittent deduction rotation of a feed position, an adhesive application position, a polymerization position, and the substrate rotary place at least, Allocate an attachment component in an upper bed part of each of this axis of rotation, and it feeds with one substrate of the bottom of the substrates of two sheets for DVD which consist of synthetic resin boards on each attachment component in this feed position, Adhesives are applied to the plate surface, rotating this one substrate in an adhesive application position, In a device which piles up a substrate of another side of the this upper part on one substrate via adhesives in a polymerization position, rotates a substrate of two sheets set in this pile in a substrate rotary place, opens adhesives, and pastes a substrate of two sheets together, A solid of revolution is allocated in each above-mentioned axis of rotation, and it is in a DVD laminating apparatus allocating and constituting a substrate rolling mechanism which makes the above-mentioned adhesive application position and a substrate rotary place as a method position of the outside of the above-mentioned rotating table rotate this solid of revolution.

[0008]The invention according to claim 2 the above-mentioned substrate rolling mechanism, An attitude mechanism to which the forward and backward movement action of a movable carriage in which a forward and backward movement action is possible, and this movable carriage is carried out towards the above-mentioned solid of revolution, It is characterized by consisting of drive mechanism which contains in this solid of revolution a driving belt in which contact estrangement is possible by a forward and backward movement action of this movable carriage, and the invention according to claim 3, The above-mentioned driving belt consists of endless belts, and carries out **** allocation of this driving belt at a guide pulley of a driving pulley and a couple, Allocate this one guide pulley in a guide pulley of another side so that moved close is possible, and a spring member which moves this one guide pulley in the direction which deserts a guide pulley of another side is allocated, It is characterized by imitating a peripheral face of a solid of revolution in a driving belt by advance of the above-mentioned movable carriage, and making curvature shape contact, and the invention according to claim 4 is characterized by the above-mentioned driving belt being a toothed belt.

[0009]

[Embodiment of the Invention]drawing 1 thru/or drawing 6 -- an embodiment of the invention -- an example being shown, and, if a same sign is attached and explained to the same mode portion as structure conventionally [said], T is a rotating table, and it is set up by the machine stool M in this case, and The feed position a. The electric discharge position b, the adhesive application position c, the polymerization position d, the low pressure position e, the substrate rotary place f. Intermittent deduction rotation is carried out at a total of 10 stations of the UV irradiation position g, the empty position h, the quality distinction extraction position i, and cleaning position j, Therefore, the 10 axes of rotation 2 are respectively arranged lengthwise by rotating table T with the bushing 3, enabling free rotation, The turntable-like attachment component 1 is attached to the upper bed part of each axis of rotation 2, and formed protruding of the medial-axis part 1a in which positioning fitting to fitting hole W_3 of the circle configuration formed in the center of substrate W_1 - W_2 of two upper and lower sides is possible is carried out to the center portion of the attachment component 1, The adsorption groove part which is open for free passage to the negative pressure source besides a figure is formed in the face of a board of the attachment component 1, and by this medial-axis part 1a, by the positioning state, one substrate W_1 is formed so that adsorption maintenance and release are possible.

[0010]The solid of revolution 5 which 4 is a substrate rolling mechanism, has been arranged in this case at the adhesive application position c, the substrate rotary place f, and the UV irradiation position g, respectively, and was attached to the lower part of each above-mentioned axis of rotation 2, It consists of the movable carriage 6 in which a forward and backward movement action is possible, the attitude mechanism 7 in which the forward and backward movement action of the movable carriage 6 is carried out, and the drive mechanism 9 which contains in the solid of revolution 5 the driving belt 8 in which contact estrangement is possible by the forward and backward movement action of the movable carriage 6 towards the solid of revolution 5.

[0011]In this case, attach the mount 10 to the machine stool M, and by the bearing 11, the movable carriage 6 is attached to the mount 10 so that a forward and backward movement action is possible, Install the cylinder 12 for an attitude horizontally in the mount 10, and the rod and the movable carriage 6 of the cylinder 12 for an attitude are connected, Attach the bracket 13 to the movable carriage 6, and the drive motor 14 is arranged lengthwise to the bracket 13, Arrange the driving shaft 15 lengthwise by the bearing 16 to the movable carriage 6, and the principal axis and the driving shaft 15 of the drive motor 14 are connected, Attach the driving pulley 17 to the driving shaft 15, and the tie-down plate 18 is

attached to the one side part of the movable carriage 6, Implant the idle movement axis 19 in the tie-down plate 18, and the guide pulley 20 is attached to the driving shaft 19, Turn the sliding plate 22 to the guide pulley 20 by the bearing 21, and it provides in the other side part of the movable carriage 6, enabling free moved close, Set up the spring credit board 23 to the movable carriage 6, and the stopper 24 is formed in the spring credit board 23, Pass the spring member 25 over between the sliding plate 22 and the spring credit board 23, and the idle movement axis 26 is implanted in the sliding plate 23, The guide pulley 27 is attached to the idle movement axis 26, the driving belt 8 of endless form is ****(ed) to the driving pulley 17 and the guide pulleys 20 and 27 of a couple, the peripheral face of the solid of revolution 5 is imitated in the driving belt 8 by advance of the movable carriage 6, and it constitutes so that curvature shape may be made to contact.

[0012]carrying out a deer -- drawing 2-- the driving pulley 17 and three belt pulleys of the guide pulleys 20 and 27 ****(ing) so that a circulation run is possible, and it being laid [firmly] by the spring member 25 and like and the driving belt 8, If the driving belt 8 will carry out a circulation run by the drive of the drive motor 14 and the movable carriage 6 is advanced with the attitude mechanism 7, Like drawing 3, contact the peripheral face of the solid of revolution 5, the sliding plate 22 resists the spring member 25 by further advance, and the driving belt 8 is moved towards the guide pulley 20, By this, when it imitates, it will curve and the driving belt 8 will contact so that it may coil around the peripheral face of the solid of revolution 5, and it retreats the movable carriage 6 with the attitude mechanism 8, it will carry out return movement of the guide pulley 27 to the original position by the spring member 25 like drawing 2.

[0013]The above-mentioned driving belt 8 is made into a toothed belt and what is called a timing belt in this case, and the driving pulley 17 and the guide pulleys 20 and 27 are formed in a toothed pulley.

[0014]In [since this example of an embodiment is the above-mentioned composition] a lamination process, First, in the feed position a, one substrate W_1 of the substrate [of two sheets] W_1 - W_2 for DVD is addressing[to one sheet]-supplied on the attachment component 1 by the substrate feed mechanism besides a figure, Holding fixing of this substrate W_1 is carried out by vacuum absorption operation on the attachment component 1, and it ranks second, In the electric discharge position b, after electricity is discharged, the adhesives S which consist of ultraviolet curing resin in the adhesive application position c while rotating the attachment component 1 by the substrate rolling mechanism 4 at a low speed are dropped on substrate W_1 , In [the adhesives S which have viscosity by this are applied to ring doughnut shape on substrate W_1 , next] the polymerization position d, In [pile up concentrically in the state where substrate W_2 of another side is placed with prudence from the upper part on one substrate W_1 , and] the low pressure position e subsequently, In [press substrate W_2 of another side lightly by a weak pressure on one substrate W_1 , open the adhesives S for a while, and] the after that and substrate rotary place f, Between mutual substrate W_1 - W_2 , open the adhesives S uniformly by carrying out the high velocity revolution of the attachment component 1 by the substrate rolling mechanism 4, and the excessive adhesives S are made to breathe out from the outer edge surface of substrate W_1 - W_2 , In this case, in [annular liquid pool slot W_4 is formed in the plate surface of substrate W_1 - W_2 , and the excessive adhesives S are dropped also into this liquid pool slot W_4 , and] the UV irradiation position g next, By the substrate rolling mechanism 4, rotating the attachment component 1 at a low speed, by irradiating with ultraviolet rays from an ultraviolet ray lamp, stiffen the adhesives S and it ranks second, In [in the quality distinction extraction position i, will make it pile each other up, and will distinguish to the excellent article and inferior goods of a state will take out, and] cleaning position j, The dirt by the adhesives on the attachment component 1, etc. will be cleaned, and a series of superposition processes will be continuously made by this repetition.

[0015]Allocate the solid of revolution 5 in each above-mentioned axis of rotation 2, and In this case, the above-mentioned adhesive application position c and the substrate rotary place f as a method position of the outside of rotating table T. Since the substrate rolling mechanism 4 which rotates the solid of revolution 5 is allocated and constituted in the UV irradiation position g and the substrate rolling mechanism 4 which rotates the axis of rotation 2 is not arranged at rotating table T, The increase in the moment of inertia of rotating table T can be controlled, deduction positioning accuracy can be raised so much, good laminating operation can be performed and miniaturization of a device and reduction of a manufacturing cost can be aimed at.

[0016]The above-mentioned substrate rolling mechanism 4 towards the above-mentioned solid of revolution 5 in this case The movable carriage 6 in which a forward and backward movement action is possible, Since it comprises the attitude mechanism 7 to which the forward and backward movement action of the movable carriage 6 is carried out, and the drive mechanism 9 which contains in the solid of revolution 5 the driving belt 8 in which contact estrangement is possible by the forward and backward movement action of the movable carriage 6, By carrying out the forward and backward movement action of the movable carriage 6 with the attitude mechanism 7, and making the solid of revolution 5 carry out contact estrangement of the driving belt 8, The axis of rotation 2 can be rotated and stopped, and simplification of structure can be attained so much, The above-mentioned driving belt 8 consists of endless belts in this case, and **** allocation of the driving belt 8 is carried out at the driving pulley 17 and the guide pulleys 20 and 27 of a couple, One guide pulley 27 is allocated in the guide pulley 20 of another side so that moved close is possible, The spring member 25 which moves one guide pulley 27 in the direction which deserts the guide pulley 20 of another side is allocated, Since it constitutes so that the peripheral face of the solid of revolution 5 may be imitated in the driving belt 8 by advance of the movable carriage 6 like drawing 3 from drawing 2 and curvature shape may be made to contact, Since contact rotation of the solid of revolution 5 can be certainly carried out with the driving belt 8 and the driving belt 8 is further formed with the toothed belt in this case, further, the driving belt 8 can protect a slide and the solid of revolution 5 can be rotated certainly, The

rotational accuracy of the attachment component 1 can be raised so much, and sticking work can be performed good.
[0017]This invention is not restricted to the above-mentioned example of an embodiment, also about the attachment component 1, the substrate rolling mechanism 4, and other structures, is changed suitably, and is designed, and the substrate rolling mechanism 4 is arranged not only at an adhesive application position and a substrate rotary place but at a required station.

[0018]

[Effect of the Invention]If this invention is in the invention according to claim 1 like ****, Allocate a solid of revolution in each axis of rotation, and to the adhesive application position and substrate rotary place as a method position of the outside of a rotating table. Since the substrate rolling mechanism which rotates a solid of revolution is allocated and constituted and the substrate rolling mechanism which rotates the axis of rotation is not arranged at a rotating table, The increase in the moment of inertia of a rotating table can be controlled, deduction positioning accuracy can be raised so much, good laminating operation can be performed and miniaturization of a device and reduction of a manufacturing cost can be aimed at.

[0019]If it is in the invention according to claim 2, the above-mentioned substrate rolling mechanism, Since it comprises a movable carriage in which a forward and backward movement action is possible, an attitude mechanism in which the forward and backward movement action of the movable carriage is carried out, and drive mechanism which contains in a solid of revolution the driving belt in which contact estrangement is possible by the forward and backward movement action of a movable carriage towards the above-mentioned solid of revolution, By carrying out the forward and backward movement action of the movable carriage with an attitude mechanism, and making a solid of revolution carry out contact estrangement of the driving belt, If the axis of rotation can be rotated and stopped, and simplification of structure can be attained so much and it is in the invention according to claim 3, The above-mentioned driving belt consists of endless belts, and carries out **** allocation of the driving belt at the guide pulley of a driving pulley and a couple, Allocate one guide pulley in the guide pulley of another side so that moved close is possible, and the spring member which moves one guide pulley in the direction which deserts the guide pulley of another side is allocated, Since it constitutes so that the peripheral face of a solid of revolution may be imitated and a driving belt may be contacted to curvature shape by advance of a movable carriage, If contact rotation of the solid of revolution can be certainly carried out with a driving belt and it is in the invention according to claim 4, since the driving belt is formed with the toothed belt, further, with a driving belt, a slide can be prevented certainly and a solid of revolution can be rotated, The rotational accuracy of an attachment component can be raised so much, and sticking work can be performed good.

[0020]As mentioned above, the desired end can be attained enough.

[Claim(s)]

[Claim 1]Two or more axes of rotation are allocated in a rotating table which carries out intermittent deduction rotation of a feed position, an adhesive application position, a polymerization position, and the substrate rotary place at least, Allocate an attachment component in an upper bed part of each of this axis of rotation, and it feeds with one substrate of the bottom of the substrates of two sheets for DVD which consist of synthetic resin boards on each attachment component in this feed position, Adhesives are applied to the plate surface, rotating this one substrate in an adhesive application position, In a device which piles up a substrate of another side of the this upper part on one substrate via adhesives in a polymerization position, rotates a substrate of two sheets set in this pile in a substrate rotary place, opens adhesives, and pastes a substrate of two sheets together, A DVD laminating apparatus having allocated a solid of revolution in each above-mentioned axis of rotation, having allocated a substrate rolling mechanism which makes the above-mentioned adhesive application position and a substrate rotary place as a method position of the outside of the above-mentioned rotating table rotate this solid of revolution, and constituting.

[Claim 2]The DVD laminating apparatus comprising according to claim 1:

It turns to the above-mentioned solid of revolution, and the above-mentioned substrate rolling mechanism is a movable carriage in which a forward and backward movement action is possible.

An attitude mechanism to which the forward and backward movement action of this movable carriage is carried out.

Drive mechanism which contains in this solid of revolution a driving belt in which contact estrangement is possible by a forward and backward movement action of this movable carriage.

[Claim 3]The above-mentioned driving belt consists of endless belts, and carries out **** allocation of this driving belt at a guide pulley of a driving pulley and a couple, Allocate this one guide pulley in a guide pulley of another side so that moved close is possible, and a spring member which moves this one guide pulley in the direction which deserts a guide pulley of another side is allocated, The DVD laminating apparatus according to claim 1 or 2 imitating a peripheral face of a solid of revolution and contacting a driving belt to curvature shape by advance of the above-mentioned movable carriage.

[Claim 4]The DVD laminating apparatus according to claim 1, 2, or 3, wherein the above-mentioned driving belt is a toothed belt.